



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,787	10/29/2003	Nancy Anne Federspiel	6616-72707-02	1171
7590 12/28/2007 One World Trade Center, Suite 1600 121 S.W. Salmon Street Portland, OR 97204			EXAMINER IBRAHIM, MEDINA AHMED	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,787

Applicant(s)

FEDERSPIEL ET AL.

Examiner

Medina A. Ibrahim

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-11 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3 and 5-11 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant's response filed 10/16/07 in reply to the Office action of 05/16/07 has been entered. Claims 3 and 5 are amended. Therefore, claims 3-11 are pending. Claim 4, drawn to the transgenic plant of claim 3 comprising SEQ ID NO: 13, is hereby rejoined with the elected invention, claims 3, 5-7 and 11.
3. This application contains claims 8-10, drawn to an invention nonelected in the reply filed on 1/23/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
4. Claims 3-7 and 11 are examined.

Inventorship

In view of the papers filed 10/16/07, the inventorship in this nonprovisional application has been changed by the deletion of inventors Nancy Anne Federspiel, Allan Lammers, Xing Liang Liu, Stanley R. Bates, Christina Westerlund, and Jonathan R. Fitch.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

5.

Claim Rejections - 35 USC § 112

Claims 3 and 5-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is repeated for the reasons of record as set forth in the last Office action of 05/16/07. Applicant's arguments filed 10/16/07 have been fully considered but are not deemed persuasive.

Applicant asserts that claims 3 and 5 are now amended to recite a PRDT1 polypeptide comprising "an Arabidopsis ortholog of SEQ ID NO:2, wherein the ortholog has at least 60% sequence identity to SEQ ID NO: 2, comprises a SANT domain, and has DNA-binding activity...". Applicant states that sequence alignment between SEQ ID NO: 13 (an Arabidopsis ortholog) and SEQ ID NO: 2, shows 66% sequence identity. Applicant also states SEQ ID NO: 2 and 13 are DNA-binding proteins. Applicant points to Exhibit A that shows a SANT domain between residues 11-54 of SEQ ID NO: 2 and between residues 14-60 of SEQ ID NO: 13 (Exhibit B). Applicant, therefore, asserts that the specification clearly describes transgenic plants comprising an Arabidopsis ortholog of SEQ ID NO: 2, wherein the ortholog has at least 60% sequence identity to SEQ ID NO: 2, comprises a SANT domain, and has DNA-binding activity, wherein said transgenic plant has increased drought tolerance relative to control plants, and methods of producing said transgenic plants (response, p.5).

These are not found persuasive because Applicant's arguments are not commensurate with the scope of the claims. The specification describes sequences from Arabidopsis thaliana that share at least 60% sequence identity, however, Applicant

provides no description about structure-function domains that determines the Peronospora resistance and drought tolerance (PRDT1) function which would allow one to predictably determine the identity of the genus of PRDT1 polypeptides from non-Arabidopsis thaliana plants having at least 60% identity to SEQ ID NO: 2 which are required for the production of the claimed transgenic plants and methods. Neither the prior art nor the instant specification provide evidence that shows SANT and/or the DNA binding domains are required for the PRDT1 polypeptide function. In addition, transgenic plants comprising SEQ ID NO: 2 and 13 and methods of producing said transgenic plants are not rejected.

Applicant argues that the specification describes PRDT1 as myb-related protein that include a SANT DNA-binding domain which was well-known to those of skill in the art at the time the application was filed. Applicant cites Aasland (Trends in Biochemical Sciences (1996) 21:87-88) to support this position (response, pp. 5-6).

These are not found persuasive because there is no known correlation between structure and function in SANT domain containing proteins. Aasland et al (Trends in Biochemical Sciences (1996) 21:87-88) suggest that the SANT domain is a putative DNA-binding domain which may be involved in transcriptional regulatory activity. At page 87, however, Aasland states "the DBD (DNA binding domain) prediction is particularly strong for those proteins..... that display two SANT domains. For those proteins with one SANT domain, the implication is less clear." Therefore, Aasland does not appear to support any specific function for a SANT domain or for polypeptides comprising a single SANT domain. Therefore, the rejection is proper.

Double Patenting

Claims 3, 5-7 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 11-14 of copending Application No. 10/512,600. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in both applications are drawn to transgenic plants comprising a plant transformation vector comprising a polynucleotide encoding SEQ ID NO: 2 and variants having % sequence identity thereof, methods of producing transgenic plants. The only difference between the claims of the two applications is that the DNA encoding SEQ ID NO: 2 in the instant application is to induce drought resistance in the transgenic plants, while the same DNA in the copending application is to induce pathogen resistance in the transgenic plants. However, both the drought and disease resistance activities are inherent properties of the DNA encoding SEQ ID NO: 2. Also, the use of drought or inducible promoter in the transformation vector would have been obvious to one of ordinary skill in the art. This rejection is repeated for the reasons of record as set forth in the last Office action of 05/16/07. Applicant's arguments filed 10/16/07 have been fully considered but are not deemed persuasive.

Applicant asserts that one of skill in the art would not have known that a polypeptide having pathogen resistance activity would also be able to induce a drought tolerance phenotype in transgenic plants. Applicant argues that application 10/512, 600 neither teaches that SEQ ID NO: 2 has drought tolerance property nor it discloses

drought inducible promoters or how to test for drought tolerance in transgenic plants.

Applicant also argues that the inherency rejection does not apply to the claims 5-7 drawn to the novel use of an unexpected property of a known sequence. Applicant, therefore, asserts that application 10/512,600 does not teach methods to generate plants having other than pathogen using the steps disclosed in the instant application. Applicant requests that the rejection be withdrawn (response, pp 7-9).

These are not found persuasive because since the rejection is obviousness type double patenting, the claims in the two applications need not be identical. The claims in both applications are drawn to transgenic plants comprising a plant transformation vector comprising a polynucleotide encoding SEQ ID NO: 2 and variants having % sequence identity thereof, wherein the transgenic plants have pathogen resistance; and methods of producing transgenic plants. The only difference between the claims of the two applications is that the DNA encoding SEQ ID NO: 2 in the instant application is to induce drought resistance in the transgenic plants, while the same DNA in the copending application is to induce pathogen resistance in the transgenic plants. Examiner maintains that the claims in the two applications are obvious over each because the claims in the instant application require that the transgenic plants expressing SEQ ID NO: 2 (or variants thereof) exhibit both Peronospora resistance and drought tolerance, while the claims in the copending application no 10/512, 600 require the transgenic plants expressing SEQ ID NO: 2 (or variants thereof) exhibit Peronospora resistance. In addition, since SEQ ID NO: 2 is a protein having a SANT domain capable of binding to stress responsive promoter elements thereby inducing

expression of one or more stress tolerance genes, one of skill in the art would expect the expression of SEQ ID NO: 2 would induce tolerance to more than one stresses.

Regarding Applicant's arguments that the application 10/512, 600 does not teach drought tolerance, drought inducible promoters, or how to test for drought tolerance in transgenic plants, it is noted that the obviousness double patenting rejection is applied between the claimed inventions and not between the teachings in the specification. In addition, none of the rejected claims are drawn to a method of testing drought tolerance in plants.

Applicant further argues that the inherency rejection does not apply to the claims 5-7, drawn to the novel use of an unanticipated property of a known sequence.

This is not found persuasive because the use of the nucleic acid encoding SEQ ID NO: 2 to induce Peronospora resistance and drought tolerance is neither novel nor unexpected property. The claims of the copending application 10/512,600 is drawn to the use of a polynucleotide encoding SEQ ID NO: 2 to induce Peronospora resistance in the transgenic plant, and one of skill in the art would expect that SEQ ID NO: 2 would also induce drought tolerance given that it is transcriptional regulatory factor that binds to stress responsive promoter elements thereby inducing expression of one or more stress tolerance genes. Therefore, the rejection is proper.

Remarks

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

Application/Control Number:
10/697,787
Art Unit: 1638

Page 9

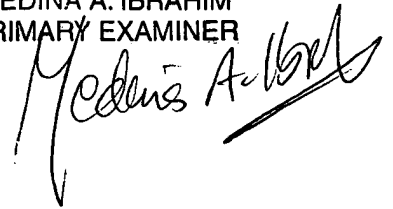
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

12/25/07

Mai

MEDINA A. IBRAHIM
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Medina A. Ibrahim', is written over the printed name and title.